COASTAL SERVICES

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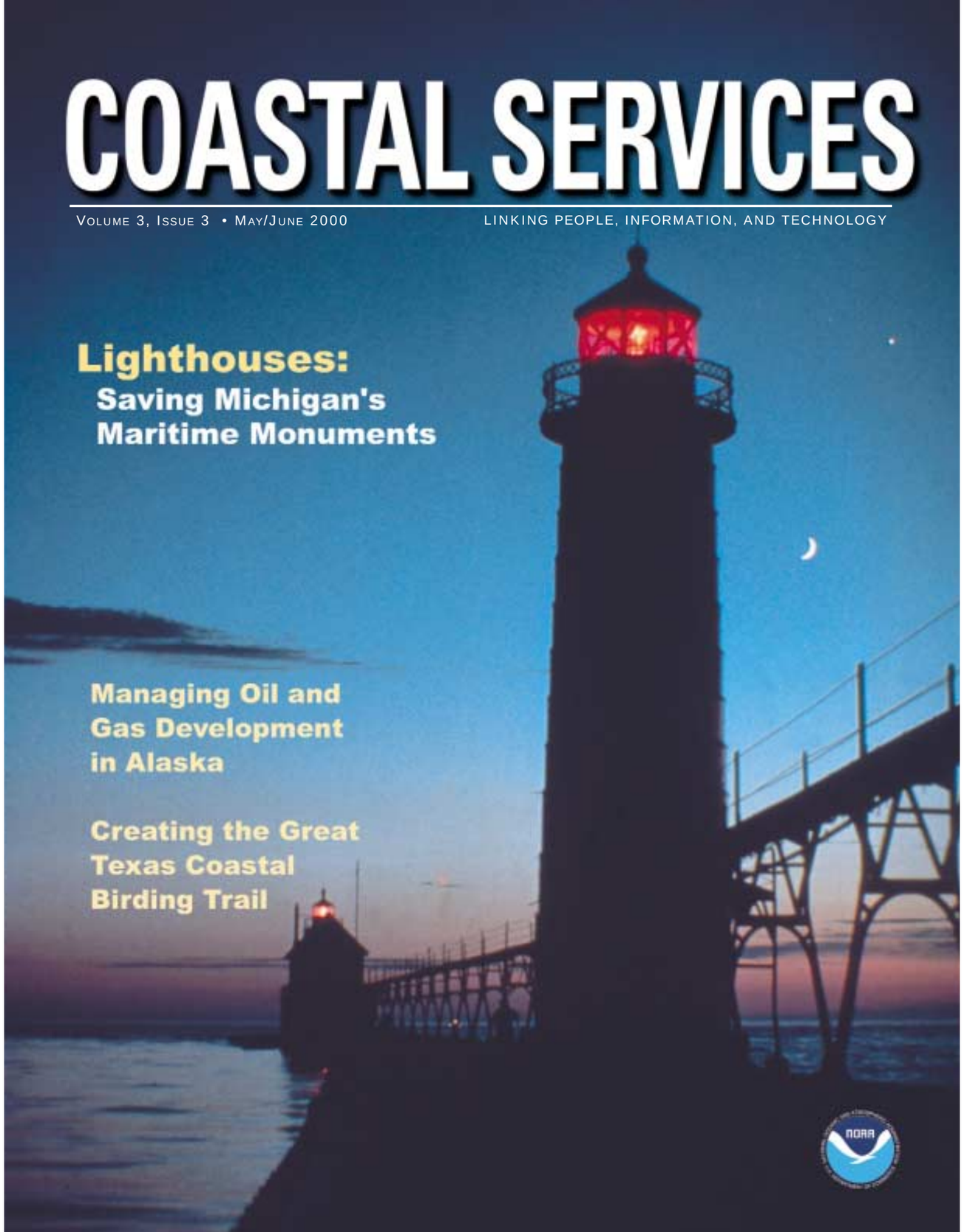
LINKING PEOPLE, INFORMATION, AND TECHNOLOGY



Lighthouses:
Saving Michigan's Maritime Monuments

Managing Oil and Gas Development in Alaska

Creating the Great Texas Coastal Birding Trail

From the Director

Lighthouses have played an important role in our country's maritime history. They have stood lonely vigil on our nation's shores helping generations of sailors navigate dangerous waters and find safe harbors. But the need to maintain lighthouses as navigational aids in many cases is coming to an end as new technology renders these imposing structures obsolete.

This loss of purpose combined with the federal government's reduced capacity to provide adequate long-term care and maintenance for lighthouses is putting the future of many of these often historic structures in peril. Since the majority of lighthouses rest on prominent points along our nation's coastline, what will the role of coastal resource managers be in navigating the complex issues and public passions that surround the future of these maritime monuments?

The cover story for this edition of *Coastal Services* examines how coastal managers in Michigan are responding to the federal government's plan to dispose of 77 of the state's 120 lighthouses by 2005. This means that new stewards must be found for nearly two-thirds of the state's lighthouses, almost all of which have national historic or architectural significance, and many of which reside on state-owned bottomlands.

In the article, you'll read about the Michigan Lighthouse Project, a successful collaboration of federal and state government agencies, state and national preservation advocacy organizations, legislators, and other interested parties addressing the fate of the state's lighthouses.

This edition of *Coastal Services* features a number of articles about successful partnerships addressing issues as varied as managing oil and gas lease sales and development in Alaska, to establishing a birding trail along the entire coast of Texas.

While each partnership and project is unique, it is clear there is always much we can learn from the experiences of others.

Please let us know if you have a project or program that you would like to share with your fellow coastal managers. We are always interested in hearing what you have to say. ”❖

Margaret A. Davidson

The NOAA Coastal Services Center works to foster and sustain the environmental and economic well being of the coast by linking people, information, and technology.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Coastal Services Center

On the cover: It is the twilight hour for 77 of Michigan's lighthouses that are no longer needed as navigational aids. Coastal resource managers in the state are helping save these beacons of the past. See story Page 4. Photo by Larry Dech and courtesy of Michigan Coastal Management Program.

NEWS AND NOTES
For Coastal Resource Managers From the NOAA Coastal Services Center

Center Survey Targets Island Needs

Puerto Rico, U.S. Virgin Islands, Commonwealth of the Northern Marianas Islands, Guam, Hawaii, American Samoa—these islands make up what NOAA refers to as the Islands region. Many of the issues faced by the Islands are similar to those faced by mainland resource management programs, yet the linguistic, cultural, geographic, and physical characteristics offer some unique challenges.

NOAA is increasing its efforts to assist the Islands. One of the first actions is preparatory in nature, as NOAA works to fully assess the region's special needs. A recent survey undertaken by the NOAA Coastal Services Center will play a big role in this initiative.

The Coastal Resource Management Survey questioned the coastal resource managers of the nation regarding their natural resource management issues, and their technological capabilities and needs. Information from the Island respondents was tallied to create a subset of the large survey report. The Islands report can be seen on the Web at *http://www.csc.noaa.gov/survey*. Analysis regarding the entire survey can be found at this site in the near future.

Coastal Services Wins National Award

Coastal Services won a top honor in the 1999 National Association of Government Communicators Blue Pencil Awards Competition. The cover article of the January/February 1999 edition, entitled “Gambling with the Environment,” won first place in the articles category.

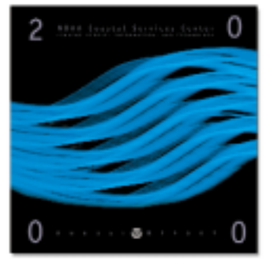
This issue along with other past editions of *Coastal Services* can be viewed on the Center's Web site at *http://www.csc.noaa.gov/newsletter*. *Coastal Services* is a trade publication for the coastal resource managers of the nation. Subscription information is obtainable from this Web site.

Coastal Program Funding Opportunities

There are many missed opportunities when it comes to funding for special coastal resource management programs. These missed opportunities usually occur because managers often are unaware of alternative funding resources.

The Center's newest Web site, “Funding Opportunities for Coastal Managers,” can help. The Web site has information about the Center's own special grants program, as well as information about funds available from other organizations.

The Web site address is *http://www.csc.noaa.gov/text/grant.html*. If you have a grant opportunity you would like included on the site, please contact the project manager, Jan Kucklick, at *Janet.Kucklick@noaa.gov*.



Your Guide to the Center

The NOAA Coastal Services Center provides a wide variety of services and products to the coastal resource managers of America. The Center's annual report profiles these products and services, and contains background information about the organization, budget numbers, contact information for staff, and summaries of ongoing projects.

To receive this free publication, call (843) 740-1272 or e-mail *Donna.McCaskill@noaa.gov*.

Alaska Finds Consistency Effective in Managing Oil and Gas Development

Photos courtesy of Alaska Division of Governmental Coordination

The Northstar pipeline will be welded together on the ice and then lowered into a subsea trench.

Oil and gas development is big business in Alaska, generating nearly 80 percent of the state government's total unrestricted revenue through lease sales, royalties, and taxes. The Alaska coastal management program leads a multiagency review of all proposed coastal and offshore oil and gas developments, ensuring coordination among state resource agencies, local governments, and federal regulators.

One such review was for the development of the first subsea oil pipeline offshore the Alaskan Arctic Ocean. The estimated $449 million Northstar oil and gas project is currently being constructed by BP Exploration (Alaska) on a joint federal and state managed reservoir in the Beaufort Sea. According to the state coastal management program, recoverable reserves are estimated at 145 million barrels of oil over the 15-year life of the project. The development likely will create 300 jobs during peak construction, and provide 100 permanent positions. Revenues from the project are expected to provide $575 million to the state, $450 million to the federal government, and $60 million to the North Slope Borough, which is the local government in the area of development. Production is projected to begin in 2001.

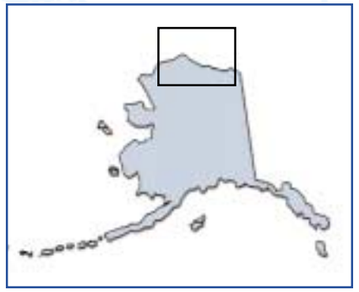
"The development of Alaska over the past 30 years has been directly tied to the development of oil," says Pat Galvin, director of the Alaska Division of Governmental Coordination (DGC), which houses the coastal management program. "One of the reasons Alaska participated in the Coastal Zone Management Act was to have a role in federal outer continental shelf oil and gas activities, and as a way of managing oil and gas development."

The DGC's role is to coordinate state reviews of proposals for oil and gas exploration and development projects, and to coordinate reviews for federal oil and gas lease sales in the outer continental shelf and in the National Petroleum Reserve in the state, says Glenn Gray, project analyst for the DGC and one of two staff members who coordinate oil and gas reviews.

"We have an independent coastal program," Gray notes. "We're located in the governor's office instead of a resource agency. Although we are the ones responsible for managing the state's coastal management program, we actually have no enforcement capability. By not being a resource agency, we don't have a stake, other than that the coastal standards are being met. We are facilitators, mediators, and try to resolve conflicts any way we can."

"The development of Alaska over the past 30 years has been directly tied to the development of oil."

Pat Galvin, Alaska Division of Governmental Coordination



The Northstar development consists of constructing a man-made gravel drilling and production island in 39 feet of water about 12 miles northwest of Prudhoe Bay. A subsea pipeline will bring the oil to land, and connect into the Trans-Alaska Oil Pipeline. Production facilities and pipelines will be located on state submerged lands. Up to six development wells could be directionally drilled from a surface location on state submerged lands into the federal outer continental shelf.

BP Exploration (Alaska) began the Northstar project exploration in the 1980s. Oil and gas development in Alaska begins with the company purchasing a state or federal lease that gives it exclusive rights to "explore whether or not there is oil in that particular area, and then have the opportunity to produce that oil." In the case of Northstar and other large projects, Gray says the companies "can work with the state for several years to try to resolve issues" before an application to develop a site for production undergoes official review.

The coastal program works with the local coastal district; staff from the state's departments of Fish and Game, Natural Resources, and Environmental Conservation; and the regional citizen's advisory council to "get a project description that is the best one with the least impacts. A lot of work goes on before the review even starts." During this "preapproval" process, Gray says the federal government sometimes conducts an Environmental Impact Statement, and the coastal program staff participates in this process as well. Gray notes that no federal permits can be issued until the "state finds consistency with the coastal program, or consistency has been presumed."

Once project proposals are officially submitted for approval, the review participants can take as little as 50 days to make a decision. But, Gray explains, a large or complicated project like the Northstar development can take months. "All reviews include deadlines, but we have the ability to stop the clock and extend the review process if an agency feels they need more information," or to provide an adequate public comment period.

Gray says Northstar was under state review for eight months, partly because the proposal was controversial. "It was up there. A lot of people were at the public hearings supporting it because of all the jobs it would create, and environmental groups were there opposing it because of a fundamental disagreement with developing offshore. We didn't get a lot of comments from citizens opposing the project that I recall." Environmental groups have since sued a number of federal and state agencies, including the coastal program, to try to stop the project. A court has not ruled on the case.

After considering public comments, the state then "looks at the effects of a project, and determines if it meets permitting requirements and statewide standards of the coastal management program and the local district standards, which are part of the coastal program. Each district has its own enforceable policies," Gray explains.

The prevention of oil spills is of primary concern to the reviewers. "The first issue on all our minds are potential oil spills," Gray says. "In my mind, the number one thing we are trying to do is prevent an oil spill from occurring, and if a spill does occur, that there would be adequate means to clean it up."

Other issues that are addressed include air and water quality, as well as the potential impact on area wildlife. "Subsistence whaling is still practiced by residents, as is the subsistence use of other marine mammals, fish, and waterfowl. Protecting caribou is of great concern to the native people."

The state approved the Northstar project with 146 "conditions that were placed on the consistency finding and on individual permits," Gray says. "BP will have to meet all those requirements before they can start pumping oil."

Gray says for Alaska oil and gas development, the consistency review process is "critical. I think the advantage of the coastal program [acting as the coordinating agency] is that it forces everyone to sit around the table to resolve issues. Otherwise each regulatory agency would resolve issues in isolation. I think it's really important for the different staff from the different agencies to see what the big issues are. Everyone sees the same public comments and the agency comments get sent around. Everyone gets to see the whole picture."❖

For more information about Alaska's oil and gas review process, contact Glenn Gray at (907) 465-8792 or e-mail glenn_gray@gov.state.ak.us.

Photo courtesy of Michigan Coastal Management Program

LIGHTHOUSES

Michigan Managers Navigate the Challenges of Saving Their Maritime Monuments

For centuries, lighthouses have served as guideposts for mariners navigating through treacherous waters or setting a safe route of passage to their next destination. But as new technologies render some lighthouses obsolete, coastal resource managers may have to help chart a new course through the challenging political waters of multigovernmental jurisdiction, intense public interest, and various natural and historic resource issues to save these beacons of the past.

Over 120 lighthouses stand on Michigan's shores—more than any other state. Almost all of Michigan's lighthouses have historic or architectural significance and are listed in, or eligible for listing in, the National Register of Historic Places. They are found atop offshore shoals, reefs, or shallows; on islands; at harbor entrances; and on prominent points along the coastline.

By 2005, a total of 77 of Michigan's lighthouses are scheduled to be declared in excess of the federal government's needs, meaning that new stewards must be found for almost two-thirds of the state's lighthouses. About 40 of these are of particular concern to state coastal managers because they are located on state-owned bottomlands in difficult-to-access offshore areas, or on piers or breakwaters, says Catherine Cunningham, chief of the Michigan Coastal Management Program.

"Lighthouses are definitely one of our priority issues," Cunningham says. "We are primarily concerned about the lighthouses in difficult-to-access areas that don't have a community or group that is interested in taking care of them. The offshore lights are more difficult to place due to issues of accessibility, high maintenance costs, and potential constraints on future uses. We don't know who will eventually be responsible for the maintenance of these orphaned lights, and have the liability for visitor and boater safety. Some of these lighthouses are in isolated areas that are fraught with danger. They are not user-friendly facilities."

One of the challenges is finding capable stewards—either state or local governments, or nonprofit agencies—that have the necessary resources not only to perpetually maintain the property, but also to restore often dilapidated structures using appropriate preservation techniques. Other concerns are ensuring that the structures are developed in ways consistent with the public trust that allow for public access; addressing environmental concerns, such as erosion or threatened species; taking into account public concerns; and preserving the state's maritime history.

To address these issues, the Michigan Lighthouse Project was created by representatives from various federal and state governmental agencies, state and national preservation advocacy organizations, legislators, and other interested parties. Considered a model by the U.S. Coast Guard, the project assists potential lighthouse stewards by serving as a clearinghouse for information on the disposal and transfer process, current and pending legislation, and available resources. Since its establishment, 7 of the 77 lighthouses have been successfully transferred to new owners.

"The group has accomplished a great deal in the two years since its establishment," says Carrie Scupholm, Michigan Lighthouse Project manager. A steering committee made up of key players "meets monthly to receive direction, set priorities as a group, and solve problems concerning these lighthouse transfers. As a group, we've been able to move forward on a lot of issues." A larger planning committee meets quarterly and provides input to the steering committee.

Cunningham says the project was created when the Coast Guard began its efforts to declare the group of lighthouses in excess of its needs and ran into a myriad of state regulatory issues. "The state process was confusing to them. They didn't know who had the lead for making decisions in the state or who, exactly, they needed to talk to. From a state perspective, we had 77 lighthouses that were going to be declared surplus and we didn't know where they were going. There was no information coordination."

In the spring of 1998, the state Historic Preservation Office of the Michigan Historical Center and the Michigan Historic Preservation Network held a meeting and "brought in all the people who would have an interest in lighthouses. From that meeting they decided there was a core of about a dozen agencies that really had a role in their management and they formed a steering committee."

The group worked to garner grants and state appropriations to help fund a full-time staff position within the Michigan Historic Preservation Network to act as a liaison between the agencies, interested organizations, and the public.

It was the state's willingness to "put its money where its mouth was," that Cmdr. Bob Desh, assistant chief for the Aids to Navigation Branch of the Ninth Coast Guard District, says has made the Michigan Lighthouse Program stand out. "By securing the funding to hire a full-time person, they're providing one-stop shopping. There is one number you can call to find out anything you want to know about Michigan lighthouses, rather than having to go through a bureaucratic daisy chain. You are directed right to an individual, who if they don't have the information you need, will act as an honest broker and seek out the information for you."

Several state agencies, including the Coastal Management Program, also provide grants to assist local restoration and preservation efforts, and develop new uses for lighthouses. Workshops explaining issues such as historic preservation techniques and the federal disposal process are provided to staff of agencies or organizations interested in becoming stewards.

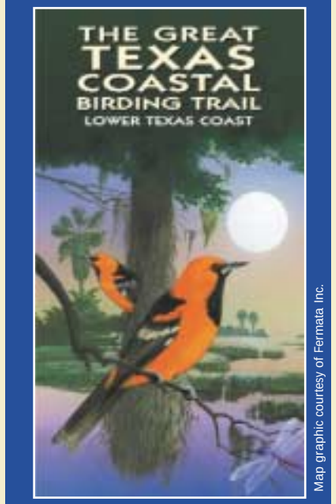
"I think the beauty of the Michigan Lighthouse Project is that you have all the partners around the table," Cunningham says. "They each have their own interests, which sometimes can be at odds, but they're still working together because it's an area of mutual interest. Coordinating our efforts saves a lot of time, running around, and paperwork."

Desh adds, "We think this is good government at its finest. Through the Michigan Lighthouse Project, we have been able to move forward on this issue and not spend unnecessary federal dollars, and accomplish what the public demands for the preservation of what I call America's castles. It has been a successful partnership."❖

For more information about the Michigan Lighthouse Project, point your browser to http://www.sos.state.mi.us /history/preserve/lights/milights.html, or contact Carrie Scupholm at (248) 625-3607 or carrie_scupholm @yahoo.com. You may also contact Catherine Cunningham at (517) 335-3456 or cunningc@state.mi.us, or Cmdr. Bob Desh at (216) 902-6065 or rdesh@d9.uscg.mil.

"Lighthouses are definitely one of our priority issues."
Catherine Cunningham, Michigan Coastal Management Program

Visitors Flock to Great Texas Coastal Birding Trail



Map graphic courtesy of Fermata Inc.

"Both the public and the communities on the trail are seeing that these habitats have great value."

Linda Campbell, Texas Parks and Wildlife Department

What if there were a way to provide economic development opportunities for coastal communities that at the same time developed public support for environmental conservation and resource management agencies? The Great Texas Coastal Birding Trail, managers say, has accomplished these seemingly conflicting objectives.

The first of its kind in the country, the Great Texas Coastal Birding Trail is a more than 700-mile driving trail that connects 308 wildlife viewing sites along the entire Texas coast. Communities, private citizens, land managers, conservation groups, businesses, and government agencies all worked together to create the trail.

"Both the public and the communities on the trail are seeing that these habitats have great value," says Linda Campbell, nature tourism coordinator with the Wildlife Diversity Program of the Texas Parks and Wildlife Department. "The economic development that comes with tourism gives the areas greater value, and provides more of an incentive to conserve them. One of the major reasons we're in this is for the conservation message."

The idea for the $1.5 million trail came out of a state initiative to boost nature tourism in Texas. According to the 1996 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation, wildlife watching was already big business in the state, contributing $1.2 billion to the Texas economy. But, Campbell says, there were "little-known jewels," particularly in rural areas, that the public had no way of knowing about. "We were already getting a lot of birders, but we needed a platform to help them find and enjoy these sites."

To fund the trail, Parks and Wildlife applied for and received two Intermodal Surface Transportation Efficiency Act (ISTEA) grants. The Texas Department of Transportation provided the 20 percent match the federal grants required. The state contracted with a private company to coordinate the project, which was completed in three sections over five years.

"The first section was the most difficult because nobody had done it before," says Ted Lee Eubanks, president of the contracting company, Fermata Inc. "By the time we finished the last section, we had an established protocol."

Eubanks says they began by holding a series of public meetings, explaining the purpose of the trail and soliciting site nominations. Eubanks and his staff then visited every site, and organized the appropriate sites into loops that a visitor could complete in a weekend. They established signage with a trail logo for each site and along highways. Illustrated maps were created for each section that provide numbered descriptions of the sites, directions to each location, the best season to visit, examples of wildlife that might be seen, and contacts for additional information. Select sites also were enhanced with such things as boardwalks and observation platforms.

In the three years since the first section of the trail was completed, Parks and Wildlife has distributed nearly 200,000 maps. Responses from a survey of trail users have "shown a high level of public support," Campbell says.

"This is a way to get people outdoors, first of all," Campbell says. "If you can get them to these places, then you help them understand the importance of conserving habitat and appreciating wildlife. You're also building public support for conservation, which is so important for public agencies. In addition, you're providing economic development for these communities. It's accomplished the three things we felt were most important." ❖

For more information about the Great Texas Coastal Birding Trail, point your browser to either http://www.tpwd.state.tx.us/birdingtrails/ or http://www.fermatainc.com/ttt_trail.html. You may also contact Linda Campbell at (512) 389-4396 or linda.campbell@tpwd.state.tx.us.

Connecticut Managers Tag Drivers to Help Preserve the Sound

Thousands of cars in Connecticut are sporting specialty license plates that not only promote the preservation of the state's Long Island Sound, but also have raised more than $3.4 million for coast-enhancing projects. Coastal resource managers in the state say the license plates have become a significant component of their program.

"It's gone beyond our wildest expectations," says Charlie Evans, director of the Office of Long Island Sound Programs. "It's really just done wonders for increasing the visibility of the Long Island Sound and the importance of the issue." He notes that the license plate program has helped fund more than 160 projects that have "added considerably to our overall coastal management efforts" that otherwise would have gone unfunded. "It's become a critical component of our overall coastal program."

Legislation modeled after the Chesapeake Bay program in Maryland established the Long Island Sound License Plate Program in 1992 as the first special-interest license plate in the state. Funds from the sale of the plates are distributed through a competitive grants process. Since its creation, Evans says more than 98,000 plates have been sold. The fund also receives private donations and a percentage of purchases from the People's Bank Preserve the Sound credit card.

A staff position was created to manage the self-funding program, explains Kate Hughes, Long Island Sound Fund coordinator. "The fund supports all the projects, promotions, and programs, including the staffing. No federal or state funds from the budget are used. The program supports itself entirely."

Depending on whether an "off-the-shelf" or vanity plate is bought, a one-time charge of $35 to $50 goes into the Long Island Sound Fund. Municipalities, schools, environmental groups, and other nonprofit organizations make grant applications for education, restoration, access, or research projects that will benefit the sound. Hughes says a 15-member advisory committee reviews the applications and makes recommendations for funding to the Department of Environmental Protection, which distributes the money through its Office of Long Island Sound Programs.

"The program supports itself entirely." Kate Hughes, Office of Long Island Sound Programs

Evans notes the types of projects that are funded through the grants process are "innovative" and will "hopefully continue on and have lasting benefits without requiring annual grant awards. This program is designed to provide more of a seed money."

Examples of projects that have been funded include a national award-winning video on the sound for elementary school students; creation and distribution of a state Coastal Public Access Guide; construction of a fishway over a dam to restore anadromous fish passage; and a study to identify and map critical shorebird habitats along Connecticut's coast and to establish a citizen's monitoring network.

Hughes says they have "found the best way to promote the program has been through the publicity generated by the completed projects. That often involves ribbon cutting ceremonies and press releases, which are time consuming, but definitely important and worthwhile."

"This has been a popular way of raising funds for the sound without having anything to do with additional taxes or state revenue enhancements," Evans says. "It really has caught fire and been a very popular program here."❖

For more information about the Long Island Sound License Plate Program, point your browser to http://dep.state.ct.us/olisp/licplate/licplate.htm. You may also contact Kate Hughes at (860) 424-3652 or kate.hughes@po.state.ct.us.

Photo courtesy of Office of Long Island Sound Programs

New Hampshire Drivers Tune In to Great Bay Radio

Millions of motorists drive by many of our country's National Estuarine Research Reserves every year and may wonder about the natural landscape and research being conducted, but not know where to turn for information. Those traveling by the Great Bay Reserve in New Hampshire need only tune in their car's radio to find out more about what they are seeing.

"This type of delivery tool could be used by any of the reserves that have people traveling through the area."

Julia Peterson,
University of New Hampshire
Sea Grant Extension

The University of New Hampshire Sea Grant Extension is one of the latest Sea Grant programs to harness low-powered radio as a way to educate the public about our nation's natural areas. Since the spring of 1999, those driving by the Great Bay Reserve have been tuning in to Great Bay Area Radio, 1610 AM, to hear about the ecology of the bay, research being conducted on the reserve, and associated educational programs.

"This type of delivery tool could be used by any of the reserves that have people traveling through the area," says University of New Hampshire Sea Grant Extension Specialist Julia Peterson. "For us, it's been a positive tool."

The program was begun, Peterson explains, as an outreach activity associated with the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), which is a partnership between the University of New Hampshire and the National Oceanographic and Atmospheric Administration. CICEET provided a grant that enabled the Sea Grant program to purchase the electronic equipment that repeats a five-minute broadcast within about a five-mile radius.

"We had to do a lot of homework," Peterson says. "Setting up a low-powered radio involves finding a location where you can actually put the electronic equipment and have it mounted to a utility pole. You have to assess the area geographically to ensure the radio will transmit well. Hills, tall buildings, or very tall trees would obscure a broadcast, so you have to find a suitable area. You also have to apply for an FCC [Federal Communications Commission Highway Advisory Radio] license and work with the equipment vendor, and make sure power and telephone lines can come to the equipment."

Sea Grant partnered with the New Hampshire Department of Transportation (DOT) to place signs along the highway inviting passersby to tune in. Peterson notes the DOT also provided the land where the broadcasting equipment was installed. "In exchange, DOT has access to the radio any time they want to use it to broadcast information about a roadway emergency."

Photo courtesy of University of New Hampshire Sea Grant Extension

Broadcast messages change about once a month, Peterson says. She or a volunteer write the scripts. Staff from Sea Grant, the state coastal program, Great Bay Reserve, and other organizations are often asked to serve as "guest DJs."

To record the broadcast, Peterson says all that is necessary is to "pick up the phone, dial a telephone number, enter a code, and speak into the phone. The technology is extremely easy to use."

To evaluate the broadcast's effectiveness, Peterson uses an on-line evaluation, which can be seen at *www.seagrant.unh.edu*. She notes both survey and anecdotal responses to the broadcast have been positive.

"We have a tremendous amount of exciting research going on here that most people likely have no idea is happening," Peterson says. "I think this program really highlights what a special resource this is, and that it really functions as a living laboratory."❖

For more information about Great Bay Area Radio, contact Julia Peterson at (603) 749-1565 or e-mail julia.peterson@unh.edu.

Ideas for the Next Issue

Are you successfully confronting an issue in your state that you think other coastal resource managers would find interesting, or could learn from? Do you have challenges that managers in other states may be successfully addressing? Then we would like to hear from you!

The articles in *Coastal Services* are about real-life projects and programs that have worked, and difficult issues that are being addressed. Your input and ideas ensure that you will find the content of future editions interesting and helpful.

The following are topics that our writers are exploring for a future edition. Please let us know if these issues are of interest, and if you are aware of innovative approaches to managing these difficult challenges.

- Urban Sprawl: More and more is being written about this issue and the need for smart growth. Are coastal managers finding solutions to address impacts from rapid development and revitalize coastal communities?

- Polluted Runoff: Are there already successful models for addressing nonpoint source pollution that will help managers as they develop their plans to address this issue? What is the coastal manager's role in helping communities develop runoff management programs?

If you would like to comment on this edition of Coastal Services, or have ideas for future articles, we would like to hear from you. Contact Hanna Goss via e-mail at Hanna.Goss@noaa.gov, or mail to 2234 South Hobson Avenue, Charleston, SC 29405-2413. You may also contact her by phone at (843) 740-1332, or fax at (843) 740-1313.

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To register for the conference or submit an abstract, visit our Web site at

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